

We claim:

1. A method of inhibiting growth of a microsatellite instability (MSI)-positive tumor, comprising introducing into said tumor a nucleic acid molecule encoding a RIZ1 polypeptide, and expressing said polypeptide in said tumor in an effective amount to inhibit growth of said tumor.
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2. The method of claim 1, wherein said tumor contains cells having an abnormal number of adenosine nucleotides in a RIZ poly(A) tract.
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3. The method of claim 2, wherein said poly(A) tract is the RIZ (A)₈ tract.
4. The method of claim 2, wherein said poly(A) tract is the RIZ (A)₉ tract.
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5. The method of claim 2, wherein said abnormal number of adenosine residues is an increased number.
6. The method of claim 2, wherein said abnormal number of adenosine residues is a decreased number.
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7. The method of claim 1, wherein expression of RIZ1 in said tumor induces apoptosis.
8. The method of claim 1, wherein said RIZ1 polypeptide comprises a PR domain amino acid sequence at least 95% identical to SEQ ID NO:5.
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9. The method of claim 8, wherein said RIZ1 polypeptide comprises SEQ ID NO:5.

10. The method of claim 1, wherein said RIZ1 polypeptide comprises an amino acid sequence at least 80%
5 identical to SEQ ID NO:4.

11. The method of claim 10, wherein said RIZ1 polypeptide comprises SEQ ID NO:4.

12. The method of claim 1, wherein said nucleic acid molecule is contained in a viral vector.

10 13. The method of claim 12, wherein said viral vector is an adenoviral vector.

14. The method of claim 1, wherein said nucleic acid molecule is administered intra- or peri-tumorally.

15 15. The method of claim 1, wherein said MSI-positive tumor is selected from the group consisting of a colorectal tumor, a gastric tumor and an endometrial tumor.

16. The method of claim 15, wherein said MSI-
20 positive tumor is a hereditary nonpolyposis colon carcinoma.

17. A method of determining MSI status of a tumor, comprising determining in said tumor the number of adenosine (A) nucleotides in a poly(A) tract of a RIZ nucleic acid molecule in said tumor, wherein an abnormal 5 number of adenosine nucleotides in said RIZ poly(A) tract indicates that the tumor is MSI-positive.

18. The method of claim 17, wherein said poly(A) tract is a RIZ (A)₈ tract.

19. The method of claim 17, wherein said 10 poly(A) tract is a RIZ (A)₉ tract.

20. The method of claim 17, wherein said abnormal number of adenosine residues is an increased number.

21. The method of claim 17, wherein said 15 abnormal number of adenosine residues is a decreased number.

22. The method of claim 17, wherein said tumor is selected from the group consisting of a colorectal tumor, a gastric tumor and an endometrial tumor.

20 23. The method of claim 22, wherein said tumor is a hereditary nonpolyposis colon carcinoma.